DOCUMENT RESUME

ED 134 217 IR 004 413

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TITLE Computer-Assisted Individualized Educational Programming.
INSTITUTION Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
PUB DATE 76
NOTE 12p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Computer Oriented Programs; Data Analysis; Data Bases; Data Collection; *Handicapped Children; *Individualized Programs; *Information Systems; Management Information Systems

ABSTRACT

This paper describes how Individualized Educational Programming (IEP) can match school district resources to handicapped children's needs. The process includes the assessment of the child's present educational performance, preparation of goals and objectives, appropriate instructional actions, resources and assessment criteria, and evaluation. Many problems arise in developing and implementing such a program; the computerized information system may provide solutions. A brief review of several existing systems reveals that they can be integrated to serve as useful tools for administrators and teachers in the design and management of the IEP. (SC)

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COMPUTER-ASSISTED INDIVIDUALIZED EDUCATIONAL PROGRAMMING

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MEETING UNIQUE NEEDS

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Fundamental to this movement is meeting the needs of the handicapped child. Not just basic needs, but the needs which, if met, would maximize that individual child's development--meeting that child's unique needs. The key to meeting those unique needs is the tailoring of the entire educational process to the child, from identification to graduation. An impossible task? Only if we are unwilling to use the tools that are available to us. Tools which can help us individualize educational programming while still maintaining some degree of sanity in education. It is a difficult task, but it can be done, as this paper will postulate.

We will look briefly at how one might meet the needs of handicapped children through the process of individualized educational programming, what problems need to be solved, and what solutions are already available.

INDIVIDUALIZED EDUCATIONAL PROGRAMMING

The process by which we match school district resources to the unique needs of a handicapped child is called "Individualized Educational Programming". Here we take a careful look at the child's needs and how the resources of the district can be optimized to meet those needs. It's a long process which may or may not result in an individualized educational program for the child.

To help us understand the process, let us follow a newly-discovered handicapped child as his or her needs are being determined. Each step may have a number of variations and there may be marked deviations from the route, but in our example we will try to be "typical". The steps along our route are:

1. In our example, the newly-discovered handicapped child will begin entry into the process at the school building. The possible need for special services may have been requested by the child's parents, teacher, or school psychologist. The school secretary initiates the process by recording basic descriptive data about the child. Name, address, referral source, and suspected need are typical data items. A special form would be used that would assist in monitoring and controlling the series of steps which follow. The form would be blocked out, step-by-step, so that the reader could quickly assess the status of the child.

2. Permission requests would be initiated. Parental, guardian, or court permission will be required before any assessment can take place. The permission must be in writing, on file, and recorded in the child data form.

3. Simultaneously with the previous step, the school district special education office or pupil-personnel office would be alerted that a child may require assessment and placement action.

4. Permission follow-up may be required. This may take the form of a letter, telephone call, visit, or even court action. The requiring of written permission is only one of a number of procedural safeguards which are written into the law. They basically insure that the parents are actively involved in and aware of all decisions regarding the child. These procedural safeguards will become an integral part of the entire system.

5. Once permission has been received, it would be recorded on the child data form and filed in the child's folder.

6. The initial formal assessment would be conducted. It is most likely that a number of different assessment individuals would be used. These include a speech therapist, audiologist, physician, psychologist, opthomologist, physical therapist, and others. The person monitoring the child's progress through the system, whom we shall call the "Case Manager", will need to identify and schedule resource people for their assessment. The results of the assessments will need to be gathered and recorded. This step may take anywhere from one month for

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a child with a generalized mental impairment to six months for more complex cases. There will be a lot of interaction and referrals during this step as each assessor alerts another about possible assessments. Like a mystery story, the plot may thicken as one learns more. The case manager plays a key role as a coordinator of this interaction.

7. The case manager gathers the basic assessments together in preparation for the next step. The basic assessments can include academic, intellectual, sensory, emotional, and physical functioning.

8. An initial conference is held to review the assessments and make recommendations for action. Participants include the case manager, the assessors, and special education staff. A number of cases are handled at one conference, each reviewed separately. The case manager orchestrates the reporting and comparison of assessment findings. This conference can be viewed as preparation for the parent conference which follows.

9. The case manager meets with the parents to review the findings and recommendations of the assessment group. Appropriate assessment personnel will be in attendance as required. As an active member of the placement team, the parent will be involved in the review and decision making process. For example, parents may bring their anecdotal information to the conference. Or they may have had independent, private assessments made of the child's condition.

10. Additional assessment may be necessary as a result of decisions made during the parent conference. For example, it may be felt during the parent conference that a pediatric neurologist should conduct an analysis to determine if a suspected epilepsy condition is real. A medication program may be necessary. Or it may be felt that a psychiatrist should be consulted to deal with a suspected behavioral problem. The results of these assessments will affect which special services are required.

11. An additional conference with the parents may also be required. In every case, the parents will have to approve the placement decision. This decision and its approval will be noted in the child data form. There will probably be three basic alternatives available: the child has no special needs, additional assessment is required, or the child does have special needs. If there are special needs then a location and teacher assignment will be required.

12. Prior to the actual placement, an individualized educational program ("IEP") must be prepared for the child. This plan would be prepared in a conference among the parents, instructional designer, and teachers. The instructional designer is a specialist in designing unique instructional plans for handicapped children. This role may be assumed by a teacher. One or more teachers may be involved depending on the type of placement. The case manager acts as a resource to the IEP development team. For example, if a blind crippled child is the subject, then a number of team members are required. The parents, the teacher for the blind, one or more "regular" classroom teachers, a mobility specialist, and so forth.

13. The first component in the IEP is a statement of the present levels of educational performance of the child. This would consist primarily of the results of the foregoing assessments and anecdotal information from the parents. Frequently a formal assessment indicates that the child is deficient in some area, but the parent may ask "Why then, does he do it everyday at home?" This discrepancy would need to be reviewed.

14. The second component in the IEP is a statement of annual goals, including short-term instructional objectives. The scope of the goals and objectives would be determined by the "approved" curriculum given in the district's plan for services to the handicapped. It is assumed that the short-term instructional objectives are sub-sets of the annual goals, prerequisites for attainment of the annual goals. Depending on the specificity of the annual goals, there may be tens or hundreds. If we assume that the instructional objectives are much more specific, then there may be hundreds or thousands. Naturally, the number and nature of the objectives would be tailored to the child's needs. Some severely handicapped children may have only a few goals and objectives whose attainment would be a significant accomplishment for them.

15. The third component in the IEP is a statement of the specific educational services to be provided to the child, and the extent to which the child will be able to participate in regular educational programs.

16. The fourth component in the IEP is the projected date for initiation and anticipation duration of educational services. Basically, when will each service start and how long will it last?

17. The fifth and final component in the IEP is the appropriate objective criteria and evaluation procedures with schedules for determining whether instructional objectives are being achieved. An example would be a compilation of criterion referenced test items for each instructional objective with a schedule for administration. The criteria may take the form of

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academic achievements for retarded children or motor achievements for crippled children.

18. The IEP will probably need periodic revision. There will be unanticipated events occuring, the goals may be out of reach or may be achieved earlier than expected, or the plan just may have not been adequate. It is assumed that the IEP team would reconvene for revising the IEP as required.

PROBLEMS TO BE SOLVED

There are a considerable number of problems in successfully developing and implementing an individualized educational program. Many of these deal with the human factors-- competencies of the participants, communication skills, managerial skills, and just plain personality problems. Other problems include familiar ones like "not enough time", "insufficient data", and "not enough help available". It's this latter type of problem that we hope to address in this section. They are the kind that are most amenable to change by refinements in the "system". We can shorten time by having a computer do some of the work. We can retrieve the needed data. And we can provide the help that is required.

Basically, we will try to identify a number of problems and suggest ways in which they might be solved. The next section will describe areas in which solutions have already been found.

Child Record Keeping

From the point of initial identification to the completion of an IEP goal, a great deal of information needs to be collected on each child. What should be collected? When? By whom? And why? Information is required for the parents, teachers, therapists, case manager, psychologists, building principal, district supervisory personnel, the state, and the federal government. Who is this child? Have permissions been received? What assessments are pending? Completed? What are the results of the assessments? What services are recommended? Being provided? What are the annual goals? Specific instructional objectives? Assessment criteria? Evaluation procedures? What is the schedule for services to be provided? Testing? These are only a few of the questions that will be asked and will require information.

An analysis needs to be done of a number of information dimensions. First, what information is needed at each level in the information hierarchy? An analysis of the role of each level in decision-making concerning the child or the child's impact on the district, state, and whatever should be made.

Another dimension is time or, perhaps more appropriately, the sequence of events. An analysis needs to be made of when the information should be collected and by whom? What reports are required along the dimension of time? We need to look at ways to avoid scheduling problems. Is there a way to anticipate needed services, whether assessment or educational, and schedule usually limited resources effectively?

Assessment Instruments

There are a considerable variety of assessment instruments available to the IEP developer. The problems associated with these instruments are multifaceted. Deciding which ones are most appropriate can be a problem. The fact that test administration may require special skills or training can be a problem. The interpretation of the results can be a problem. And making the jump from test results to the practical input for an IEP can be a major problem.

A study needs to be made of the available instruments that minimize the problems mentioned above. Surely there must be a number of instruments which are broad in scope, easy to administer, and give a direct result in terms of goals or objectives.

The fact that parents will become actively involved in the IEP development process requires that they be able to understand the test results. There will not be time to teach them the jargon of testing, they will want the results in "black and white". Objective-based assessment instruments would be an excellent solution.

Preparing Goals and Objectives

Every handicapped child will require a statement of annual goals and short-term instructional objectives. These will have to be in keeping with the child's unique needs and the approved district curriculum. The number of objectives can easily be in the hundreds for each child and will range from academic to social to motor skills. Matching the child's unique needs with specific objectives within a school district curriculum will be a formidable task. There needs to be a bank of interrelated goals and objectives which can be drawn from as necessary. Each of these goals and objectives could be keyed to special needs so that while the objectives themselves would not be unique, the combinations would be. Thus it becomes a problem of selecting the best combination of objectives to meet this child's needs rather than preparing unique objectives. This is an easier solved problem. Not easy, but easier. A computer-based retrieval system would be one example of a solution.

Identifying Instructional Actions and Resources

Once the goals and objectives are established for the child, the teacher or teachers may be in a quandary as to how to help the child achieve the objectives. The number of alternative ways to work towards that objective will be many and some will be better than others depending on the child's unique needs. But before we even consider the alternatives, we have to be sure that the teacher is aware of them. Then, to add the last straw, once we have selected the "appropriate" actions, the teacher needs to have all the help she can get, probably in the form of people, paper, film, kit, and other resources. Somehow the numbers seem to grow rapidly; hundreds of objectives by hundreds of actions and resources by tens of students and the teacher is overwhelmed before she starts. She needs a rapid, cost-effective way to link resources and actions to objectives and goals.

Here again, a computer-based retrieval system may be an effective solution.

Preparing Assessment Criteria

Each short-term instructional objective and its corresponding annual goal will require assessment criteria. If the goals and objectives are unique, then the criteria will have to be unique also. If, on the other hand, we are really talking about unique combinations of already-prepared objectives, then the assessment criteria can be treated in the same way. Each objective would have a number of assessment criteria already identified with it. The selection of a specific criterion may depend on the child's interests, needs, or handicapping condition. Again, the use of a computer retrieval system to link already-prepared assessment criteria to objectives may be a solution.

IEP Management

Once the IEP is prepared, the teacher needs to switch roles. Up to this point the teacher has been a planner, a consultant, and an active member of the IEP team. Imagine, a teacher with 15 IEP folders in hand. Fifteen unique plans with different objectives, different schedules, and different criteria. We know that the teacher cannot possibly provide instruction in that unique a fashion. Some commonalities must be identified and appropriate grouping occur. Or, continue to imagine, that a child will need the services of many teachers, therapists, and other specialists. There may be many children like this, each requiring a unique combination of services. How are we going to schedule these kids, keep track of their progress, and know when milestones are reached? In sum, we need to consider how we can optimize the time and skills of our most important resources—the teachers.

The way we optimize the teacher's time is to give her aids for managing the instructional process. The teacher needs a way to store the IEP, record progress, report status, and distribute it. She also needs a way to integrate the unique plans so that her teaching time is optimized. She needs to be reminded when a scheduled evaluation is due and when an objective should have been achieved. If there is more than one teacher, then each teacher must have access to the IEP for the child.

The kinds of management system required for the IEP is prevalent outside of education. But education has become so used to the grouping by age or grouping by handicap that individualizing is still very new. Techniques are available which would take each IEP in a "group" of students and identify commonalities. Then seek out optimal patterns of instruction to use all resources, particularly the teacher, most effectively.

EXISTING SOLUTIONS

There are a number of systems which already exist that provide some degree of solution to the problems described above. One may consider them tools which help in the individualized educational planning process. While their original intent was not to be components in a total process for individualized educational programming, we will treat them as such here. Let us take a brief look at each of them, one at a time.

Child Information Management System

This system was developed to help local, regional, and state special education officials manage the information about children as they progressed through the identification, assessment, and placement process. The system, still in its basic design stage, defines what data should be collected on each child and when. The design considers the reporting requirements for each level—local, regional, state, and federal. It also makes recommendations for computerization of the record-keeping process.

While the system is still in its design stage, much of the basic groundwork has already been done. At least with respect to the identification-assessment-placement process. Information needs have been determined and recommendations have been made for integrating such a system into the day-to-day operations of a major city school district.

What remains in the development of additional forms and reporting formats, user guides, and user training materials. The system should also be extended into record-keeping for the individualized educational program. This would be a natural addition to the identification-assessment-placement record-keeping which has already been studied.

Development Inventory

In Battelle's evaluation of the handicapped children's early education program it was necessary to develop a child-based "milestone" type scale for measuring child progress and development. The result was the Children's Early Education Developmental Inventory (CEEDI). The results of a CEEDI testing are reported in terms of child performance by age range in each of five domains: motor, communication, cognitive, social-personal, and adaptive (self-help). Three types of items are in the inventory: items administered in a one-to-one testing situation, items where behavior is observed by a teacher, and items for which a parent report of behavior is requested. In addition, the items in each of the five domains are sequenced in terms of the age at which the behavior would be expected to occur in the normally developed child.

Because of the fact that the results of the CEEDI are expressed in terms of specific behaviors, the instrument is quite amenable to "prescribing" behavioral objectives for the IEP. If a child were given the CEEDI, then two major IEP functions would be fulfilled: the identification of the current developmental status of the child and the identification of which behaviors have not yet been achieved.

Learner Planning System

Imagine a process by which you, as a teacher, select a number of learning objectives for a particular student; you characterize the student in terms of a number of variables such as interests, age, reading level, and so forth; and then receive, in return, a suggested list of materials, activities, performance measures, and supportive information for use in helping the student learn. You would

be able to select from over 500 objectives in 14 curriculum areas, receiving suggested resources drawn from a pool of over 30,000 in less than 10 minutes. Such a system is the Handicapped Education Learner's Planning System (HELPS). Operating in a demonstration mode for the past two years, HELPS has already served over 600 teachers on a statewide basis. These teachers have conducted over 3,000 searches of the resources to help children in a number of handicapped areas.

In the context of IEP, HELPS provides an excellent means of linking short-term objectives, instructional actions and resources, and assessment criteria to each other and to the annual goals for each child. HELPS can rapidly tell you what might be the most appropriate resources to help meet the unique needs of a handicapped child. The teacher or IEP team makes the final decision on specifically which resources should be used. HELPS only sorts through the tens of thousands of possibilities to arrive at the most reasonable possibilities.

Instructional Management System

Once a teacher selects a number of objectives for a student and receives suggestions for resources to be used, she needs a way to keep track of the student during instruction. This need is met by the reporting component of the Directive Teaching Instructional Management System (DTIMS).

DTIMS is a means to help a teacher keep track of what is being taught to each student, how much progress each student has made, and where her class of students are with respect to their objectives. Reports from DTIMS help the teacher make the adjustment from individual planner to group manager.

Coupled with the child information management system, DTIMS provides a comprehensive record-keeping and reporting system to provide full instructional management.

WHAT REMAINS

We have reviewed briefly what is required for Individualized Educational Programming and how a number of existing systems provide solutions. While each of the systems was not originally designed with the others in mind, the ingenuity of man and a fundamental need (the IEP) can rectify that. They do compliment each other, and do it quite well, giving a comprehensive "package" of tools for the school administrator and teacher in the design and management of IEP's. Without these kinds of tools, the teacher can be left floundering in what would seem to be a sea of impossible tasks. The administrator is overburdened with excess instructional planning and management costs, and the handicapped child's unique needs are left unmet.

We need to bring together enough interested parties to work toward making these tools work. We need to create user guides, training materials, and such so that anyone, anywhere can use the tools effectively. Battelle is planning to stimulate this cooperative venture by inviting state departments of education to join together in a cooperative program. This program, supported by subscriptions, will develop the packaging necessary to help each state use the tools to meet their own unique needs. The description of the program will be made at a conference to be held in mid-October. Further information may be obtained from the author.

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Another dimension is time or, perhaps more appropriately, the sequence of events. An analysis needs to be made of when the information should be collected and by whom? What reports are required along the dimension of time? We need to look at ways to avoid scheduling problems. Is there a way to anticipate needed services, whether assessment or educational, and schedule usually limited resources effectively?

Assessment Instruments

There are a considerable variety of assessment instruments available to the IEP developer. The problems associated with these instruments are multifaceted. Deciding which ones are most appropriate can be a problem. The fact that test administration may require special skills or training can be a problem. The interpretation of the results can be a problem. And making the jump from test results to the practical input for an IEP can be a major problem.

A study needs to be made of the available instruments that minimize the problems mentioned above. Surely there must be a number of instruments which are broad in scope, easy to administer, and give a direct result in terms of goals or objectives.

The fact that parents will become actively involved in the IEP development process requires that they be able to understand the test results. There will not be time to teach them the jargon of testing, they will want the results in "black and white". Objective-based assessment instruments would be an excellent solution.

Preparing Goals and Objectives

Every handicapped child will require a statement of annual goals and short-term instructional objectives. These will have to be in keeping with the child's unique needs and the approved district curriculum. The number of objectives can easily be in the hundreds for each child and will range from academic to social to motor skills. Matching the child's unique needs with specific objectives within a school district curriculum will be a formidable task. There needs to be a bank of interrelated goals and objectives which can be drawn from as necessary. Each of these goals and objectives could be keyed to special needs so that while the objectives themselves would not be unique, the combinations would be. Thus it becomes a problem of selecting the best combination of objectives to meet this child's needs rather than preparing unique objectives. This is an easier solved problem. Not easy, but easier. A computer-based retrieval system would be one example of a solution.

Identifying Instructional Actions and Resources

Once the goals and objectives are established for the child, the teacher or teachers may be in a quandary as to how to help the child achieve the objectives. The number of alternative ways to work towards that objective will be many and some will be better than others depending on the child's unique needs. But before we even consider the alternatives, we have to be sure that the teacher is aware of them. Then, to add the last straw, once we have selected the "appropriate" actions, the teacher needs to have all the help she can get, probably in the form of people, paper, film, kit, and other resources. Somehow the numbers seem to grow rapidly; hundreds of objectives by hundreds of actions and resources by tens of students and the teacher is overwhelmed before she starts. She needs a rapid, cost-effective way to link resources and actions to objectives and goals.

Here again, a computer-based retrieval system may be an effective solution.

Preparing Assessment Criteria

Each short-term instructional objective and its corresponding annual goal will require assessment criteria. If the goals and objectives are unique, then the criteria will have to be unique also. If, on the other hand, we are really talking about unique combinations of already-prepared objectives, then the assessment criteria can be treated in the same way. Each objective would have a number of assessment criteria already identified with it. The selection of a specific criterion may depend on the child's interests, needs, or handicapping condition. Again, the use of a computer retrieval system to link already-prepared assessment criteria to objectives may be a solution.

IEP Management

Once the IEP is prepared, the teacher needs to switch roles. Up to this point the teacher has been a planner, a consultant, and an active member of the IEP team. Imagine, a teacher with 15 IEP folders in hand. Fifteen unique plans with different objectives, different schedules, and different criteria. We know that the teacher cannot possibly provide instruction in that unique a fashion. Some commonalities must be identified and appropriate grouping occur. Or, continue to imagine, that a child will need the services of many teachers, therapists, and other specialists. There may be many children like this, each requiring a unique combination of services. How are we going to schedule these kids, keep track of their progress, and know when milestones are reached? In sum, we need to consider how we can optimize the time and skills of our most important resources--the teachers.

The way we optimize the teacher's time is to give her aids for managing the instructional process. The teacher needs a way to store the IEP, record progress, report status, and distribute it. She also needs a way to integrate the unique plans so that her teaching time is optimized. She needs to be reminded when a scheduled evaluation is due and when an objective should have been achieved. If there is more than one teacher, then each teacher must have access to the IEP for the child.

The kinds of management system required for the IEP is prevalent outside of education. But education has become so used to the grouping by age or grouping by handicap that individualizing is still very new. Techniques are available which would take each IEP in a "group" of students and identify commonalities. Then seek out optimal patterns of instruction to use all resources, particularly the teacher, most effectively.

EXISTING SOLUTIONS

There are a number of systems which already exist that provide some degree of solution to the problems described above. One may consider them tools which help in the individualized educational planning process. While their original intent was not to be components in a total process for individualized educational programming, we will treat them as such here. Let us take a brief look at each of them, one at a time.

Child Information Management System

This system was developed to help local, regional, and state special education officials manage the information about children as they progressed through the identification, assessment, and placement process. The system, still in its basic design stage, defines what data should be collected on each child and when. The design considers the reporting requirements for each level--local, regional, state, and federal. It also makes recommendations for computerization of the record-keeping process.

While the system is still in its design stage, much of the basic groundwork has already been done. At least with respect to the identification-assessment-placement process. Information needs have been determined and recommendations have been made for integrating such a system into the day-to-day operations of a major city school district.

What remains in the development of additional forms and reporting formats, user guides, and user training materials. The system should also be extended into record-keeping for the individualized educational program. This would be a natural addition to the identification-assessment-placement record-keeping which has already been studied.

Development Inventory

In Battelle's evaluation of the handicapped children's early education program it was necessary to develop a child-based "milestone" type scale for measuring child progress and development. The result was the Children's Early Education Developmental Inventory (CEEDI). The results of a CEEDI testing are reported in terms of child performance by age range in each of five domains: motor, communication, cognitive, social-personal, and adaptive (self-help). Three types of items are in the inventory: items administered in a one-to-one testing situation, items where behavior is observed by a teacher, and items for which a parent report of behavior is requested. In addition, the items in each of the five domains are sequenced in terms of the age at which the behavior would be expected to occur in the normally developed child.

Because of the fact that the results of the CEEDI are expressed in terms of specific behaviors, the instrument is quite amenable to "prescribing" behavioral objectives for the IEP. If a child were given the CEEDI, then two major IEP functions would be fulfilled: the identification of the current developmental status of the child and the identification of which behaviors have not yet been achieved.

Learner Planning System

Imagine a process by which you, as a teacher, select a number of learning objectives for a particular student; you characterize the student in terms of a number of variables such as interests, age, reading level, and so forth; and then receive, in return, a suggested list of materials, activities, performance measures, and supportive information for use in helping the student learn. You would

be able to select from over 500 objectives in 14 curriculum areas, receiving suggested resources drawn from a pool of over 30,000 in less than 10 minutes. Such a system is the Handicapped Education Learner's Planning System (HELPS). Operating in a demonstration mode for the past two years, HELPS has already served over 600 teachers on a statewide basis. These teachers have conducted over 3,000 searches of the resources to help children in a number of handicapped areas.

In the context of IEP, HELPS provides an excellent means of linking short-term objectives, instructional actions and resources, and assessment criteria to each other and to the annual goals for each child. HELPS can rapidly tell you what might be the most appropriate resources to help meet the unique needs of a handicapped child. The teacher or IEP team makes the final decision on specifically which resources should be used. HELPS only sorts through the tens of thousands of possibilities to arrive at the most reasonable possibilities.

Instructional Management System

Once a teacher selects a number of objectives for a student and receives suggestions for resources to be used, she needs a way to keep track of the student during instruction. This need is met by the reporting component of the Directive Teaching Instructional Management System (DTIMS).

DTIMS is a means to help a teacher keep track of what is being taught to each student, how much progress each student has made, and where her class of students are with respect to their objectives. Reports from DTIMS help the teacher make the adjustment from individual planner to group manager.

Coupled with the child information management system, DTIMS provides a comprehensive record-keeping and reporting system to provide full instructional management.

WHAT REMAINS

We have reviewed briefly what is required for Individualized Educational Programming and how a number of existing systems provide solutions. While each of the systems was not originally designed with the others in mind, the ingenuity of man and a fundamental need (the IEP) can rectify that. They do compliment each other, and do it quite well, giving a comprehensive "package" of tools for the school administrator and teacher in the design and management of IEP's. Without these kinds of tools, the teacher can be left floundering in what would seem to be a sea of impossible tasks. The administrator is overburdened with excess instructional planning and management costs, and the handicapped child's unique needs are left unmet.

We need to bring together enough interested parties to work toward making these tools work. We need to create user guides, training materials, and such so that anyone, anywhere can use the tools effectively. Battelle is planning to stimulate this cooperative venture by inviting state departments of education to join together in a cooperative program. This program, supported by subscriptions, will develop the packaging necessary to help each state use the tools to meet their own unique needs. The description of the program will be made at a conference to be held in mid-October. Further information may be obtained from the author.